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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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SMART AND BIGGAR
438 UNIVERSITY AVENUE
SUITE 1500 BOX 111
TORONTO, ON M5G2K8
CANADA

EXAMINER

TON, ANTHONY T

ART UNIT	PAPER NUMBER
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2661

DATE MAILED: 04/07/2004

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/750,071

Applicant(s)

BESHAI ET AL.

Examiner

Anthony T Ton

Art Unit

2661

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2 and 4.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTIONS

Specification

1. The disclosure is objected to because of the following informalities:

Term “**space switch controller**” in page 4 line 11 is improper with Fig. 3 since it would be confused with a term that labeled as “**Space Switch Controller 214**” shown in Fig.3. Actually, the references of these two terms are different from each other; one refers to “**a master controller 210**” and the other refers to “**a slave space switch controller 214**” (this is as indicated above).

Therefore, Examiner suggests changing the term “**space switch controller**” to “**master controller**”.

Appropriate correction is required.

Claim Objections

2. **Claim 19** is objected to because of the following informalities:

Phrase “**output ports and indications**” in **Claim 19** in line 8 is not quite clear because term “**and**” can be confused with the term “**and**” recited in line 7. Therefore a comma “,” should be inserted between term “**ports**” and the term “**and**” to make the phrase more clear.

Examiner suggests changing this phrase to “**output ports, and indications**”.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

Art Unit: 2661

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

4. **Claims 1-4** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a) **Claims 1, 3 and 4** recite the limitation "**and instruct**" in **line 10 of Claim 1**, in **lines 11 and 12 of Claim 3**, and in **line 10 of Claim 4** is vague and indefinite since the subject of the verb "**instruct**" cannot be determined in the claimed limitation "*transmitting instructions to a slave controller for said space switch, where said instructions are based on said scheduling information and instruct said space switch to establish said requested connection*" of these claims.

Therefore, this limitation of the claims is improper.

b) **Claim 3** recites the limitation "**said bust transfer request**" in lines 3-4. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 1-21** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Grimble et al** (US Patent No. **5,241,536**) in view of **Nomura et al** (US Patent No. **6,118,762**).

a) **Regarding to Claim 3: Grimble et al.** (provided by Applicant's IDS #4) **disclosed** a space switch master controller (*see Fig.6*) comprising:

a source interface for receiving a stream of burst transfer requests from a source node, each of said burst transfer request including parameters specifying a requested connection and a duration for said requested connection (*see Fig.6: input ports 1-64 are used to receive a stream of burst transfer requests; see col.4 line 65- col.5 line 12: demands of bursty channels; and see col.6 lines 46-48: a cell arriving at input port contains, among other things, a header with destination information (hence, transfer requests); and*

a slave controller interface for transmitting instructions to a slave controller for said space switch, where said instructions are based on said scheduling information and instruct said space switch to establish said requested connection (*see Fig.6: block 68 (considered as a slave controller), blocks 62's, input ports, output ports and block 66 (all of these blocks are considered as the components of a slave controller interface); and see col.7 line 1-col.8 line 65: information (considered as received instructions from a master controller), a set bit in the accessed row indicates that a connection involving that port has been listed in the list controller memory means 77 of the list controller means 68 (the slave controller) for that corresponding timeslot for establishing a connection*).

Grimble et al failed to explicitly disclose a source interface for transmitting scheduling information for each of said burst transfer requests to said source node; and a burst scheduler for generating said scheduling information for each of said burst transfer requests in said stream based on said parameters.

However, Grimble et al disclosed the timeslot utilization means 66 directs the information about the input port number (*considered as the source node since the source node would be connected to the space switch 60 via one of input ports of the core node*) to input port selector 70 (*considered that this information sent to the source node*) (*see col.7 lines 1-10*); and **Grimble et al also disclosed** the results (*considered as scheduling information*) from the timeslot utilization means 66 and a scheduler for scheduling transmitting data throughout the space switch 60 (*see Fig.6, block 6 and col.6 lines 46-68*). Therefore, **it would be obvious** on these two subject matters of the claim.

Nomura et al clearly disclosed scheduling information for each of said burst transfer requests is transmitted to the source node (*see Figs.4 and 6, and col.8 lines 32-67*).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide such scheduling information for each of said burst transfer requests is transmitted to the source node throughout the input interface of the switch of Grimble et al, as taught by Nomura et al so that a source node that sends a burst transfer request can know a schedule to which the source can send its bursty data to a next node in communication networks, **the motivation being** to provide enhancing reliability and more efficiency in a data packet network.

Nomura et al also clearly disclosed generating scheduling information for each of said burst transfer request (*see Fig.12 and col.10 line 59-col.11 line 3*).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to provide such generating scheduling information for each of said burst transfer request through out the scheduler of Grimble et al, as taught by Nomura et al so that a source node that sends a burst transfer request can know a schedule to which the source can send its bursty data to a next node in communication networks, **the motivation being** to avoid congestions to enhance reliability and make Grimble et al more efficient.

b) **Regarding to Claim 4: Grimble et al. disclosed** a computer readable medium containing computer-executable instructions which, when performed by a processor in a space switch master controller, cause the processor to:

receive a stream of burst transfer requests from a source node, each of said burst transfer requests including parameters specifying a requested connection and a duration for said requested connection (*see Fig.6: input ports 1-64; and see col.4 line 65- col.5 line 12: demands of bursty channels*); and

transmit instructions to a slave controller for said space switch, where said instructions are based on said scheduling information and instruct said space switch to establish said requested connection (*see col.6 lines 56-62: The results from the timeslot utilization means along with the input port number and destination information are passed to the list controller means 68 (the slave controller) where it is stored for future use*).

Grimble et al failed to explicitly disclose generating scheduling information for each of said burst transfer requests in said stream based on said parameters; and transmitting said scheduling information for each of said burst transfer requests to said source node. These subject matters were explained in the Claim 3 above.

Therefore, **it would have been obvious** to combine Grimble et al and Nomura et al for the same reason as in Claim 3.

c) **Regarding to Claims 1 and 2:** These claims are rejected for the same reasons as Claim 4 because the apparatus in Claim 4 can be used to practice the method steps of Claims 1 and 2.

d) **Regarding to Claim 17: Grimble et al. disclosed** a burst scheduler (see Fig.6) comprising a processor operable to:

determine a next-available input port among a plurality of input ports and a time index at which said next-available input port will become available (see abstract: An encoder determines the earliest commonly available timeslot for connecting input ports and their request output ports; and see col.6 lines 19-36: the column that indicates queue depth from 1-256 and one of these numbers are considered as a time index);

for each burst transfer request of a plurality of burst transfer requests received in relation to said next-available input port, and where each said each burst transfer request includes an identity of a burst and a destination for said burst:

determine, from said destination for said burst, a corresponding output port among a plurality of output ports (see col.7 lines 27-30: input and output ports are available for use);

determine a time gap, where said time gap is a difference between (*see col.7 line 55-col.8 line 33: 6 timeslots (a time gap) from timeslot 254 to the timeslot 3*):

said time index at which said next-available input port will become available (*see col.7 line 55-col.8 line 33: timeslot 254*); and

a time index at which said corresponding output port will become available (*see col.7 line 55-col.8 line 33: timeslot 3*);

select one of said plurality of burst transfer requests as a selected burst transfer request, where said selected burst transfer request has a minimum time gap of said plurality of burst transfer requests (*see col.8 lines 34-65: the number of timeslots available for prescheduling*);

select a scheduled time index, where said scheduled time index is one of said time index at which said next-available input port is available and said time index at which said corresponding output port is available (*see abstract: The system further includes a revolving window priority encoder means for determining the earliest common timeslot among the future timeslots for connection between an input port and one or more output ports selected according to the header of a cell stored in the buffer memory means*); and

Grimble et al failed to explicitly disclose generate scheduling information for a burst identified by said selected burst transfer request, said scheduling information based on said scheduled time index. This subject matter was explained in the Claim 3 above.

Therefore, **it would have been obvious** to combine Grimble et al and Nomura et al for the same reason as in Claim 3.

e) **Regarding to Claim 18:** This claim is rejected for the same reasons as Claim 17 because the apparatus in Claim 17 can be used to practice the computer readable medium of Claim 18.

f) **Regarding to Claim 5:** This claim is rejected for the same reasons as Claim 17 because the apparatus in Claim 17 can be used to practice the method steps of Claim 5.

g) **Regarding to Claim 19: Grimble et al. disclosed** a core node in a data network comprising:

a space switch (*see Fig.6: block 60*);
a plurality of input ports (*see Fig.6: ports 1-64 on the left of the figure*);
a plurality of output ports (*see Fig.6: ports 1-64 on the right of the figure*);and
a slave controller for said space switch for receiving instructions from a master controller of said space switch, said instructions including specifications of temporary connections to establish between said plurality of input ports and said plurality of output ports and indications of timing with which to establish said connections (*see Fig.6: block 68 (considered as a slave controller), blocks 62's, input ports, output ports and block 66 (all of these blocks are considered as the components of a master controller); and see col.7 line 1-col.8 line 65: information (considered as received instructions from a master controller), a set bit in the accessed row indicates that a connection involving that port has been listed in the list controller memory means 77 of the list controller means 68 (the slave controller) for that corresponding timeslot. At the end of timeslot 3, when the connection list has been read to the configuration sequencer 88, the entries corresponding to that timeslot in the timeslot utilization*

arrays 74 and 76 are reset to "not busy" and the list items for the timeslot 3 can be deleted from the list controller means 68 (hence, temporary connections to establish between said plurality of input ports and said plurality of output ports and indications of timing with which to establish said connections)).

h) Regarding to Claim 20: Grimble et al. further disclosed the core node further comprising a master controller for said space switch, for:

receiving a stream of burst transfer requests from a source node, each of said burst transfer requests including parameters specifying a requested connection and a duration for said requested connection (see Fig.6: input ports 1-64 are used to receive a stream of burst transfer requests; see col.4 line 65- col.5 line 12: demands of bursty channels; and see col.6 lines 46-48: a cell arriving at input port contains, among other things, a header with destination information (hence, transfer requests); and

transmitting said instructions to said slave controller for said space switch, where said instructions are based on said scheduling information (see col.6 lines 56-62: The results from the timeslot utilization means along with the input port number and destination information are passed to the list controller means 68 (the slave controller) where it is stored for future use).

Grimble et al failed to explicitly disclose generating scheduling information for each said burst transfer request based on said parameters; and transmitting said scheduling information to said source node. These subject matters were explained in the Claim 3 above.

Therefore, **it would have been obvious** to combine Grimble et al and Nomura et al for the same reason as in Claim 3.

i) **Regarding to Claim 21:** This claim is rejected for the same reasons as Claims 19 and 20 because the apparatus in Claims 19 and 20 can be used to practice the data network of Claim 21.

Allowable Subject Matter

7. **Claims 6-16** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Anthony T Ton** whose telephone number is 703-305-8956. The examiner can normally be reached on M-F: 8:00 am - 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Douglas W Olms can be reached on 703-305-4703. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ATT 4/5/2004


KENNETH VANDERPUYE
PRIMARY EXAMINER